



September 21, 2018

*By Electronic Filing*

Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW  
Washington, DC 20554

Re: *ViaSat, Inc. Petition for Declaratory Ruling Granting Access to the U.S. Market for the ViaSat System, IBFS File No. SAT-PDR-20161115-00120; Streamlined Licensing Procedures for Small Satellites, IB Docket No. 18-86; Assessment and Collection of Regulatory Fees for Fiscal Year 2018, MD Docket No. 18-175*

Dear Ms. Dortch:

Pursuant to 47 C.F.R. § 1.1206, Hughes Network Systems, LLC (together with its affiliates, "Hughes") submits this *ex parte* letter summarizing its *ex parte* meeting on September 20, 2018 regarding the above-captioned proceedings. Present at the meeting on behalf of Hughes were Jennifer A. Manner, Senior Vice President, Regulatory Affairs along with outside counsel Lynne Montgomery. Also present were the following International Bureau, Satellite Division staff: Jose Albuquerque, Karl Kensinger, Stephen Duall, Merissa Velez, Chris Bair and Samuel Karty. At the meeting, Hughes discussed the points set forth in the attached presentation.

Please direct any questions regarding this matter to the undersigned.

Respectfully submitted,

/s/ Jennifer A. Manner  
Jennifer A. Manner  
Senior Vice President, Regulatory Affairs

Attachment

cc: Jose Albuquerque  
Karl Kensinger  
Stephen Duall  
Merissa Velez

Chris Bair  
Samuel Karty  
John P. Janka (Counsel to ViaSat, Inc.)



## VIASAT'S REQUEST FOR NON-CONFORMING INTER-SATELLITE SERVICE USE OF KA-BAND FIXED-SATELLITE SERVICE SPECTRUM SHOULD BE DISMISSED

*ViaSat Petition for U.S. Market Access (IBFS File No. SAT-PDR-20161115-00120); Streamlined Licensing Procedures for Small Satellites (IB Dkt. No. 18-86)*

September 2018

- Hughes Network Systems, LLC (“Hughes”) is the largest provider of satellite broadband services in the United States and globally. Hughes operates three satellites in the Ka band, including spectrum that ViaSat seeks access for inter-satellite links (“ISLs”) (*i.e.*, 17.8-19.3 GHz and 19.7-20.2 GHz for inter-satellite “downlinks” from geostationary (“GSO”) to non-geostationary (“NGSO”) satellites, and 27.5-29.1 GHz and 29.5-30.0 GHz for inter-satellite “uplinks” from NGSO to GSO satellites).<sup>1</sup>
- Hughes also has obtained Commission authority to launch and operate its next-generation satellite, JUPITER 3, to provide state-of-the-art satellite broadband services to consumers across the United States in these same (and other) frequency bands.<sup>2</sup> The satellite is under construction and planned for launch in 2020. As the first-of-its-kind ultra-high density satellite, JUPITER 3 is designed to provide two-way internet access at speeds of up to an estimated 100 Mbps down using the Ka and V bands, including 17.8-19.3 GHz, 19.7-20.2 GHz, 27.5-29.1 GHz, and 29.5-30.0 GHz.<sup>3</sup>

### **The Commission Should Dismiss ViaSat’s Request for Ka-band ISLs Since No International Frequency Allocation for ISL Use of the Spectrum Exists.**

- Section 25.112(a)(3) of the FCC’s rules requires dismissal of a request for “authority to operate a space station in a frequency band that is not allocated internationally for such operations under the Radio Regulations of the International Telecommunication Union.” In adopting this rule, the FCC stated that it “will dismiss applications for NGSO-like satellite systems without prejudice as premature [in cases where there is no international

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<sup>1</sup> ViaSat is seeking market access for a Ka- and V-band NGSO constellation, utilizing portions of the Ka-band (*i.e.*, 17.8-19.3 GHz, 19.7-20.2 GHz, 27.5-29.1 GHz, and 29.5-30.0 GHz) “to support high-speed transmissions between its MEO [NGSO] constellation and its in-orbit GSO satellites.” *See* ViaSat, Petition for Declaratory Ruling, p.5 (filed November 15, 2016).

<sup>2</sup> *See* Hughes Network Systems, LLC Application for Satellite Space Station Authorizations, IBFS File No. SAT-LOA-20170621-00092 (Mar. 20, 2018) (granted in part, deferred in part).

<sup>3</sup> Press release: “Hughes Selects Space Systems Loral to Build Next-Generation Ultra High Density Satellite” (August 9, 2017), available at: <http://ir.echostar.com/news-releases/news-release-details/hughes-selects-space-systems-loral-build-next-generation-ultra>

frequency allocation].”<sup>4</sup> The FCC further noted that “[o]nce there is an international frequency allocation ... [but] before a domestic allocation is adopted,” an applicant may request a waiver of the *domestic* allocations to permit a non-conforming use of spectrum.<sup>5</sup>

- Neither the International Table nor U.S. Table of Frequency Allocations provides any allocation for ViaSat’s proposed ISL use of Ka-band spectrum. *See* 47 C.F.R. § 2.106.
- The FCC has found that “ISLs are communication links between in-orbit satellites .... [and] operate in spectrum *allocated to the inter-satellite service* [“ISS”].”<sup>6</sup> The FCC has deferred licensing of ISLs when the spectrum is not internationally allocated or otherwise available for ISS use.<sup>7</sup>
- ViaSat argues that Section 2.1 of the FCC’s rules broadly defines “Fixed-Satellite Service” to “include[] satellite-to-satellite links, which may also be operated in the inter-satellite service,” but fails to cite to any FCC precedent finding that ISLs qualify as FSS and may be authorized consistent with an international FSS allocation. Moreover, as the FCC itself has noted in the *Small Satellites* proceeding, “an allocation for FSS may be limited by parenthetical to the space-to-Earth direction. In that instance, inter-satellite communications would *not* be in accordance with the Table of Allocations.”<sup>8</sup>
- ViaSat further argues that inter-satellite transmissions are consistent with an FSS allocation if they merely “point” in the direction suggested by the relevant parenthetical (*e.g.*, space-to-Earth),<sup>9</sup> but this novel interpretation is contrary to the FCC’s own finding that inter-satellite transmissions would be in accordance with an FSS allocation only “[w]here a parenthetical to the FSS allocation specified ‘space-to-space’ communications.”<sup>10</sup>
- Accordingly, in the absence of an international allocation for ISS use of the requested Ka-band spectrum, the FCC lacks authority to waive its allocation rules to permit non-conforming ISS use, and consequently should dismiss ViaSat’s request for Ka-band ISLs. The FCC also should reject ViaSat’s request for rules in the *Small Satellites* proceeding to permit ISS use of spectrum not allocated for such use.

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<sup>4</sup> *See Amendment of the Commission’s Space Station Licensing Rules and Policies*, 18 FCC Rcd 10760, ¶ 49 (2003).

<sup>5</sup> *See id.* ¶ 50.

<sup>6</sup> *See Teledesic*, Order and Authorization, DA 01-229, ¶ 1 n.3 (IB 2001) (emphasis added) (citing International Telecommunication Union (“ITU”) Radio Regulation § 1.22).

<sup>7</sup> *See, e.g., Teledesic*, 12 FCC Rcd 3154, ¶ 21 (1997).

<sup>8</sup> *See Streamlining Licensing Procedures for Small Satellites*, Notice of Proposed Rulemaking, FCC 18-44, ¶ 70 (2018) (“*Small Satellites NPRM*”) (emphasis added).

<sup>9</sup> *See Reply Comments of ViaSat*, IB Dkt. No. 18-86, at 3 (Aug. 7, 2018).

<sup>10</sup> *See Small Satellites NPRM*, ¶ 70.

**At a Minimum the FCC Should Defer Authorizing Use of Ka-Band FSS Spectrum for ISLs Until Technical Studies Are Completed to Ensure Interference Protection to GSO Operations.**

- Use of Ka-band FSS spectrum for ISLs has not been subject to completed technical studies to ensure interference protection to GSO operations. Although ViaSat has submitted a technical analysis purportedly showing no harmful interference, the analysis has not been fully vetted or supported domestically or internationally.
- Specific allocations of frequency bands for use as ISS links are traditionally made by competent World Radiocommunication Conferences (“WRC”) based on study contributions and analysis that guarantee the safe use of those frequency bands for such service. If necessary, an agenda item could be proposed at WRC-19 for consideration at WRC-23.
- ViaSat argues that technical studies are not required to be completed at the ITU because its proposed inter-satellite links are “entirely consistent” with the existing FSS definition and existing FSS allocations,<sup>11</sup> but as discussed above, such inter-satellite links in fact are not consistent with the existing FSS definition or FSS allocations and need study to see the impact on the sharing and interference environments.
- In any event, ViaSat has recognized the importance of protecting GSO operations from harmful interference caused by NGSO systems and has supported conditioning grants of market access on the adoption of suitable aggregate interference limits.<sup>12</sup> As with the concerns over aggregate EPFD limits, the impact of multiple, large-scale NGSO constellations using ISS links to interconnect orbital arcs in FSS Ka-band spectrum has not been sufficiently quantified in order to fashion adequate protections for existing GSO networks. Unlike the concern over aggregate EPFD limits, there are no baseline interference standards from which operators can comport their NGSO-to-GSO FSS Ka-band ISS transmissions. Moreover, no studies have been conducted to determine whether use of FSS Ka-band spectrum for ISS links will contribute to aggregate EPFD limits, further exacerbating the issue for which ViaSat has itself demanded action.
- Without further analysis being performed and appropriate rules being adopted domestically and internationally, there is a risk that ViaSat’s proposal could result in harmful interference to other satellite systems (both GSO and NGSO) in the Ka band. It is imperative then that further action on ViaSat’s NGSO-to-GSO proposal be deferred until standards for antenna pointing accuracy, performance standards and interference avoidance can be addressed internationally and domestically.

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<sup>11</sup> See ViaSat Reply Comments, IB Dkt. No. 18-86, at 4.

<sup>12</sup> Reply Comments of ViaSat, IBFS File No. SAT-PDR-20161115-00120, (July 14, 2017).

- Accordingly, consideration of ViaSat’s request for ISL use of Ka-band spectrum should be dismissed or at least deferred until completion of appropriate technical studies and adoption of technical and operational rules to ensure interference protection to GSO operations at a competent WRC and then domestically.
- The United States should consider advancing a future agenda item for WRC 2023 focused on the use of the Ka-band for use for inter-satellite service links which includes the study of these bands and their impact on incumbent services. Such an Agenda item will enable the development of studies to ensure that the most efficient use of the spectrum and protection of incumbent services from harmful interference.

*Assessment and Collection of Regulatory Fees for Fiscal Year 2018, MD Dkt No. 18-175*

**The Commission Should Assign Regulatory Fees for Small Satellite Operators and Reassess the Fees in One Year to Ensure They are Sufficient to Cover the Costs Attributable to the Part 25 processes.**

- EchoStar supports the Commission’s efforts to streamline the regulatory processes for Small satellites (“SmallSat”) through the Small Satellite rulemaking.
- SmallSat operators should be subject to an annual regulatory fee. EchoStar agrees with the Commission’s initial assessment that the SmallSat annual fee should be set at a ratio of 1/20<sup>th</sup> of the rate currently applied to NGSO satellite operators.
- EchoStar urges the Commission to set this 1/20<sup>th</sup> ratio on a one-year basis only, subject to re-examination during the FY2019 regulatory fee proceeding. Re-examination will ensure that the fees being assessed to Small Sat operations are sufficient to cover the costs attributable to the streamlined Part 25 Small Sat application processes.
- During the FY2019 re-examination, the Commission can also determine the proper metric for assessing regulatory fees: whether the fees should be a ratio pinned to NGSO fees or whether they should be independently determined and increased based on the amount of work the SmallSat regulation generates for International Bureau Staff.